AMENDMENTS TO THE CLAIMS

1. (Previously presented) An apparatus comprising:

a planar structure expandable into a 3-D structure, the planar structure comprising,

first and second spaced side beams which extend continuously along a longitudinal axis, and

a plurality of spaced cross-bands which connect the side beams together wherein a first set of the cross-bands are expandable in a first direction substantially perpendicular to the longitudinal axis to form a 3-D structure.

2. (Previously presented) The apparatus as claimed in claim 1, wherein a second set of the cross-bands are expandable in a second direction substantially opposite the first-direction to form a mesh-like 3-D structure.

3. (Previously presented) The apparatus as claimed in claim 2, wherein adjacent cross-bands are expandable in the opposite directions to form a mesh-like 3-D structure.

4. (Previously presented) The apparatus as claimed in claim 1, wherein the planar structure plastically deforms during expansion so that the 3-D structure is free standing.

5. (Previously presented) The apparatus as claimed in claim 2, wherein the planar structure plastically deforms during expansion so that the 3-D structure has a cylindrical geometry.

6. (Previously presented) The apparatus as claimed in claim 2, wherein the 3-D structure is a tubular stent.

7. (Previously presented) The apparatus as claimed in claim 1, wherein the planar structure includes a conductive foil.

8. (Previously presented) The apparatus as claimed in claim 1, wherein each of the cross-bands includes a series of folded beams.

9. (Previously presented) The apparatus as claimed in claim 8, wherein the folded beams have an involute pattern.

10. (Previously presented) The apparatus as claimed in claim 8, wherein the folded beams have a switchback pattern.

11. (Previously presented) The apparatus as claimed in claim 8, wherein each of the cross-bands includes hinges for interconnecting adjacent folded beams.

12. (Previously presented) The apparatus as claimed in claim 1, wherein the side beams and cross-bands include biocompatible surface coatings.

13. (Previously presented) The apparatus as claimed in claim 1, wherein the side beams and cross-bands are made of a biocompatible metal.

14. (Previously presented) The apparatus as claimed in claim 1, wherein the cross-bands are made of a shape-memory alloy and wherein the planar structure is self-expandable.

15. (Previously presented) The apparatus as claimed in claim 1, wherein the side beams and cross-bands are made of at least one of a biocompatible and a biodegradable polymer.

16. (Previously presented) The apparatus as claimed in claim 1, wherein the side beams and cross-bands are formed by removing material from a sheet of material.

17. (Previously presented) The apparatus as claimed in claim 16, wherein the sheet of material includes conductive foil and wherein side beams and cross-bands are formed by electric discharge machining the conductive foil.

18. (Previously presented) The apparatus as claimed in claim 1, wherein at least the first side beam includes a link portion having a mechanical strength lower than other

portions of the first side beam to allow the first side beam to break at the link portion during expansion of the first set of cross-bands.

19. (Previously presented) The apparatus as claimed in claim 18, wherein the link portion is thinned relative to the other portions of the first side beam.

20. (Previously presented) The apparatus as claimed in claim 18, wherein the link portion is made of a fragile material relative to the other portions of the first side beam.

21. (Previously presented) The apparatus as claimed in claim 18, wherein the 3-D structure is a helical coil.

22. (Previously presented) The apparatus as claimed in claim 21, wherein the helical coil comprises at least one electrical inductor.

23. (Previously presented) The apparatus as claimed in claim 21, wherein the helical coil includes first and second spaced rings at opposite ends thereof and wherein each of the rings is formed by an adjacent pair of expanded cross-bands.

24. (Previously presented) The apparatus as claimed in claim 23, wherein at least the first ring includes a dielectric part which mechanically connects but electrically insulates adjacent portions of the first ring.

25. (Previously presented) The apparatus as claimed in claim 23, wherein at least the first ring includes a link portion having a mechanical strength lower than other portions of the first ring to allow the first ring to break at the link portion during expansion of the first set of cross-bands to open an electrical path formed by the first ring.

26. (Previously presented) The apparatus as claimed in claim 1, wherein at least one of the side beams and the cross-bands includes a dielectric part which mechanically connects but electrically insulates adjacent portions of the at least one of the side beams and the cross-bands.

27. – 35. (Canceled)

36. (Previously presented) A stent comprising:

a planar structure in a non-expanded position and expandable into a 3-D structure in an expanded position;

first and second spaced side beams which extend along a longitudinal axis of the stent in the non-expanded position;

a first set of cross-bands that connect the side beams together and that are expandable in a first direction substantially perpendicular to the longitudinal axis, where each cross-band in the first set includes a plurality of interconnected and folded back first and second beam sections disposed in a plane of the stent when the stent is in the non-expanded position; and

a second set of cross-bands that connect the side beams together and are expandable in a second direction substantially opposite the first-direction to form the 3-D structure along with the first set of cross-bands, where each of the cross-bands in the second set includes a plurality of interconnected and folded back first and second beam sections disposed in the plane of the stent when the stent is in the non-expanded position.

37. (Previously presented) The stent as claimed in claim 36, wherein each of the plurality of interconnected and folded back first and second beam sections of the first set of cross-bands are interconnected by a hinge to open to expand the first set of cross-bands into the expanded position.

38. (Previously presented) The stent as claimed in claim 37, wherein the first set of cross-bands includes six pairs of interconnected and folded back first and second beam sections that cooperate with one another to traverse the space between the side beams.

39. (Previously presented) The stent as claimed in claim 37, wherein the first set of cross-bands have an involute pattern in which a longest beam section of the plurality of interconnected and folded back first and second beam sections extends perpendicular to the longitudinal axis.

40. (Previously presented) The stent as claimed in claim 37, wherein the first set of cross-bands have a switchback pattern in which a longest beam section of the plurality

of interconnected and folded back first and second beam sections extends parallel to the longitudinal axis.

41. (Previously presented) The stent as claimed in claim 36, wherein the plurality of interconnected and folded back first and second beam sections of the first set of cross-bands rotate about a center by at least 90° during expansion into the expanded position.

42. (Previously presented) The stent as claimed in claim 36, wherein the second set of cross-bands are identical to the first set of cross-bands when looking at the stent from a top plan view.

43. (Previously presented) The stent as claimed in claim 36, wherein the second set of cross-bands are each offset from the first set of cross-bands when looking at the stent from a top plan view.

44. (Previously presented) The stent as claimed in claim 36, wherein the second set of cross-bands are each 180° rotations of the first set of cross-bands when looking at the stent from a top plan view.

45. (Previously presented) The stent as claimed in claim 36, wherein each of the first and second side beams includes a link that is breakable during expansion of the stent.

46. (Previously presented) A stent for use with a balloon catheter and comprising:

a unitary stent structure disposed in a plane when in a non-expanded position and having a longitudinal axis;

the stent structure including first and second parallel spaced apart side beams extending parallel to the longitudinal axis;

a plurality of cross-bands extending across the stent structure and interconnecting the side beams;

each of the cross-bands including a plurality of interconnected and folded back beam sections;

each of the cross-bands arranged to deflect away from the plane of the stent to an expanded position in response to application of an expansion force from the balloon catheter;

a first set of the cross-beams arranged to deflect away from the plane of the stent in a first direction; and

a second set of the cross-beams arranged to deflect away from the plane of the stent in a second direction opposite the first direction.

47. (Previously presented) The stent as claimed in claim 46, wherein each of the plurality of interconnected and folded back beam sections are interconnected by a hinge section, the hinge section arranged to permit the folded back beam sections to rotate relative to one another about a rotation axis.

48. (New) The apparatus of claim 1, wherein the first and second side beams are on opposing sides of the planar structure.

49. (New) The stent of claim 36, wherein the first and second side beams are on opposing sides of the planar structure.